Annual Report
on
Findings of Infectious Agents in Japan
2008

CONTENTS

This report was prepared by Editorial Committee of Infectious Agents Surveillance Report, 2009:

List of prefectural and municipal public health institute participating in the reporting system, 2009

Code number	Prefecture /city	Institute
011	Hokkaido P.	Hokkaido Institute of Public Health
012	Sapporo C.	Sapporo City Institute of Public Health
013	Hakodate C.	Hakodate City Institute of Public Health
021	Aomori P.	Aomori Prefectural Institute of Public Health and Environment
031	Iwate P.	Research Institute for Environmental Sciences and Public Health of Iwate Prefecture
041	Miyagi P.	Miyagi Prefectural Institute of Public Health and Environment
042	Sendai C.	Sendai City Institute of Public Health
051	Akita P.	Akita Research Center for Public Health and Environment
061	Yamagata P.	Yamagata Prefectural Institute of Public Health
071	Fukushima P.	Fukushima Institute of Public Health
081	Ibaraki P.	Ibaraki Prefectural Institute of Public Health
091	Tochigi P.	Tochigi Prefectural Institute of Public Health and Environmental Science
101	Gunma P.	Gunma Prefectural Institute of Public Health and Environmental Sciences
111	Saitama P.	Saitama Institute of Public Health
112	Saitama C.	Saitama City Institute of Health and Science
121	Chiba P.	Chiba Prefectural Institute of Public Health
122	Chiba C.	Chiba City Institute of Health and Environment
131	Tokyo M.	Tokyo Metropolitan Institute of Public Health
141	Kanagawa P.	Kanagawa Prefectural Institute of Public Health
142	Yokohama C.	Yokohama City Institute of Health
143	Kawasaki C.	Kawasaki City Institute for Public Health
144	Yokosuka C.	Yokosuka City Institute of Public Health
145	Sagamihara C.	Sagamihara City Institute of Public Health
151	Niigata P.	Niigata Prefectural Institute of Public Health and Environmental Sciences
152	Niigata C.	Niigata City Institute of Public Health and Environment
161	Toyama P.	Toyama Institute of Health
171	Ishikawa P.	Ishikawa Prefectural Institute of Public Health and Environmental Science
181	Fukui P.	Fukui Prefectural Institute of Public Health and Environmental Science
191	Yamanashi P.	Yamanashi Institute for Public Health
201	Nagano P.	Nagano Environmental Conservation Research Institute
202	Nagano C.	Nagano City Institute of Environment and Hygiene
211	Gifu P.	Gifu Prefectural Institute of Health and Environmental Sciences
212	Gifu C.	Hygienic Laboratory of Gifu City
221	Shizuoka P.	Shizuoka Institute of Environment and Hygiene
222	Shizuoka C.	Shizuoka City Institute of Public Health
223	Hamamatsu C.	Hamamatsu City Institute of Public Health
231	Aichi P.	Aichi Prefectural Institute of Public Health
232	Nagoya C.	Nagoya City Public Health Research Institute
241	Mie P.	Mie Prefectural Health and Environmental Research Institute
251	Shiga P.	Shiga Prefectural Institute of Public Health and Environmental Science
261	Kyoto P.	Kyoto Prefectural Institute of Public Health and Environment
262	Kyoto C.	Kyoto City Institute of Health and Environmental Sciences
271	Osaka P.	Osaka Prefectural Institute of Public Health
272	Osaka C.	Osaka City Institute of Public Health and Environmental Sciences
273	Sakai C.	Sakai City Institute of Public Health
281	Hyogo P.	Hyogo Prefectural Institute of Public Health and Environmental Sciences
282	Kobe C.	Kobe City Institute of Health
283	Himeji C.	Himeji City Institute of Environment and Health
284	Amagasaki C.	Amagasaki City Institute of Public Health
291	Nara P.	Nara Prefectural Institute for Hygiene and Environment
301	Wakayama P.	Wakayama Prefectural Research Center of Environment and Public Health
302	Wakayama C.	Wakayama City Institute of Public Health
311	Tottori P.	Tottori Prefectural Institute of Public Health and Environmental Science
321	Shimane P.	Shimane Prefectural Institute of Public Health and Environmental Science
331	Okayama P.	Okayama Prefectural Institute for Environmental Science and Public Health
341	Hiroshima P.	Hiroshima Prefectural Health Environment Center
342	Hiroshima C.	Hiroshima City Institute of Public Health
351	Yamaguchi P.	Yamaguchi Prefectural Research Institute of Public Health

361	Tokushima P.	Tokushima Prefectural Institute of Public Health and Environmental Sciences
371	Kagawa P.	Kagawa Prefectural Research Institute for Environmental Sciences and Public Health
381	Ehime P.	Ehime Prefectural Institute of Public Health and Environmental Science
391	Kochi P.	The Public Health Institute of Kochi Prefecture
401	Fukuoka P.	Fukuoka Institute of Health and Environmental Sciences
402	Fukuoka C.	Fukuoka City Institute for Hygiene and the Environment
403	Kitakyushu C.	Kitakyushu City Institute of Environmental Sciences
411	Saga P.	Saga Prefectural Institute of Public Health and Pharmaceutical Research
421	Nagasaki P.	Nagasaki Prefectural Institute of Public Health and Environmental Sciences
422	Nagasaki C.	Nagasaki Municipal Public Health and Environment Laboratory
431	Kumamoto P.	Kumamoto Prefectural Institute of Public Health and Environmental Science
432	Kumamoto C.	Kumamoto City Environmental Research Institute
441	Oita P.	Oita Prefectural Institute of Health and Environment
451	Miyazaki P.	Miyazaki Prefectural Institute for Public Health and Environment
461	Kagoshima P.	Kagoshima Prefectural Institute for Environmental Research and Public Health
471	Okinawa P.	Okinawa Prefectural Institute of Health and Environment

P.: Prefecture C.: City M.: Metropolitan

List of quarantine stations participating in the reporting system, 2009

Narita Airport Quarantine Station
Chubu Airport Branch Office, Nagoya Quarantine Station
Kansai Airport Quarantine Station

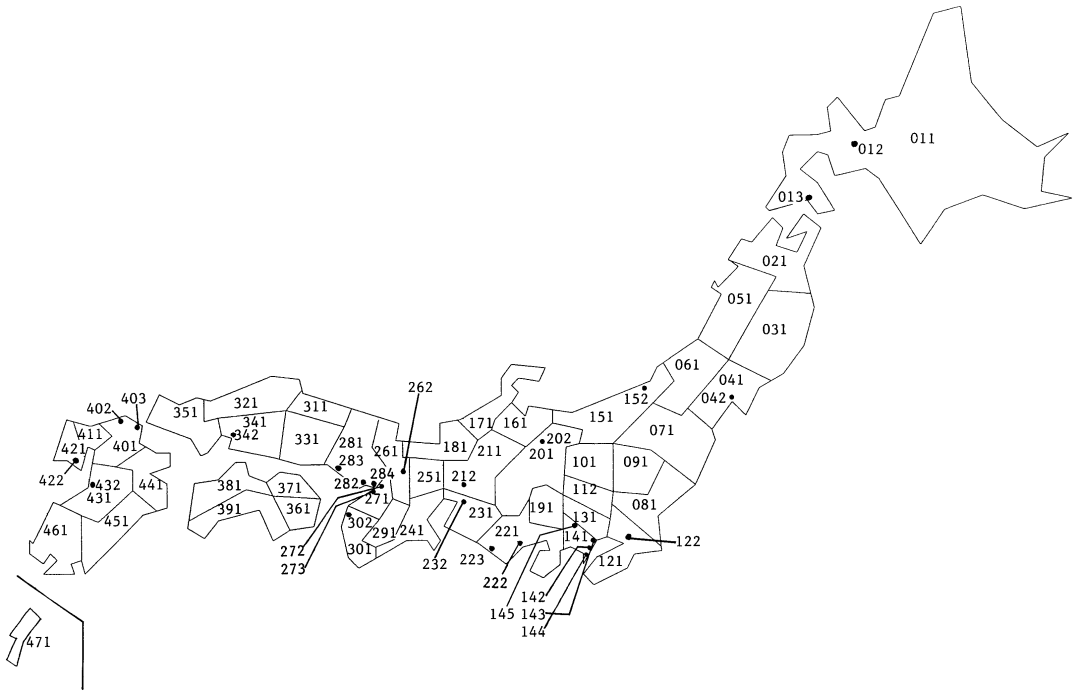

Fig. 1. Code number of prefectural and municipal public health institutes participating in the reporting system, 2009.

Foreword

This is the *2008 Annual Report on Findings of Infectious Agents in Japan*. Since the National Epidemiological Surveillance of Infectious Diseases was established in July 1981, it has been providing a valuable source of information necessary to take effective countermeasures against the prevention and control of infectious diseases in Japan. Under this program before April 1999, 27 infectious diseases were specified to be surveyed at designated sentinels in each prefecture, and the epidemiological data on both patients and pathogens has been gathered through nationwide surveillance network systems.

Infectious Disease Surveillance Center (IDSC) under National Institute of Infectious Diseases (NIID) serves as an information center where laboratory data on pathogens are collected, analyzed and distributed for public use in collaboration with various institutions such as prefectural and municipal public health institutes, quarantine stations, designated hospitals and health centers. Some departments other than IDSC of NIID function also as national reference laboratories for standardization of the diagnostic methods and reagents used at central and regional public health laboratories. It is noteworthy that such reference activities have strengthened cooperative relationships among many organizations participating in this surveillance program and that the quality of laboratory data obtained through the surveillance network has been much improved during the last decade.

In April 1999, the Law Concerning the Prevention of Infectious Diseases and Medical Care for Patients of Infections (the Infectious Diseases Control Law) was enacted (see p. 16-18 of this issue) and partially amended on November 5, 2003 (http://idsc.nih.go.jp/iasr/25/287/tpc287.html). Relatively important infectious diseases newly specified to be notified by all physicians to nearby health centers (see p. 18 of this issue). The weekly numbers of cases with common infectious diseases at sentinel clinics has been also reported to the health centers, in continuation of the surveillance system started in 1981. Those data are sent to IDSC through a national computer network (WISH-NET) organized by Ministry of Health and Welfare in 1987.

In parallel with the disease surveillance, data on the infectious agents detected from some of the patients at prefectural and municipal public health institutes and quarantine stations are also sent to IDSC through another system on the WISH-NET installed in 1997. This on-line system has been improved since January 2000 in accordance with the above Law. This annual report deals with the data on the infectious agent surveillance in 2008.

NIID together with Tuberculosis and Infectious Diseases Control Division, Ministry of Health, Labour and Welfare publishes a monthly report, *Infectious Agents Surveillance Report* (*IASR*) from 1983. To address the need for wider distribution and utilization of the *IASR* information, the special review article on a selected topic has been translated into English since January 1993 and distributed to relevant institutions including major overseas institutions every month, together with the original article written in Japanese. The English articles, THE TOPIC OF THIS MONTH from the January issue of 2009 to the December issue of 2009 are contained in this 2008 annual report. We hope the publication of this annual report will provide useful information to clinical and research organizations and also to public health administrators.

Finally, I would like to express my sincere thanks to all the organizations and individuals participating in this surveillance program for their sustained efforts and enthusiastic cooperation which have made this publication possible.

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Infectious Disease Surveillance Center
Chairman,
Editorial Committee of Infectious Agents Surveillance Report
National Institute of Infectious Diseases

Annual Report on Findings of Infectious Agents in Japan, 2008

1. Pathogen surveillance system in Japan and Infectious Agents Surveillance Report (IASR)

Surveillance of infectious diseases in Japan consists of two components, reporting of isolated/detected pathogens and reporting of infectious disease cases. Here, National Institute of Infectious Diseases (NIID) plays central role in that it hosts the Infectious Disease Surveillance Center (IDSC). The IDSC receives the pathogen detection reports from prefectural and municipal public health institutes (PHIs) and from quarantine stations and the infectious disease case reports from health centers in prefectures and cities designated by ordinance. The both data are tabulated into determined formats altogether, analyzed, and evaluated for their public health implications. Once finishing the whole processes, the IDSC feeds the analysis and evaluation results back to the data originators and disseminates these information to other public health authorities and also to the general public.

Pathogen Surveillance System: A budgetary measure was taken for the nationwide infectious disease surveillance program in July 1981. Preceding this event, however, NIID (former National Institute of Health, NIH) and PHIs had already established the Association of Public Health Laboratories for Microbiological Technology (APHLMT) (in 1980) so as to facilitate networking of their infectious disease control activities. APHLMT now has Reference Committee and Laboratory-based Information Committee that discuss issues related to operation of the infectious disease surveillance in Japan and promotion of execution of their mission. APHLMT holds the general assembly once a year, which is accompanied with several study group meetings. To complement such activities, NIID established NIID Reference Committee and IASR Committee.

The infectious disease surveillance has a legal status as the National Epidemiological Surveillance of Infectious Diseases (NESID) under the Law Concerning the Prevention of Infectious Diseases and Medical Care for Patients of Infections (the Infectious Diseases Control Law) since its enactment in April 1999. Pathogen surveillance started to have a defined role in the NESID under the law and has been conducted as shown in Fig. 2 after further amendment of the law in November 2003.

The case definition for reporting is available for each of the categories I-V infectious diseases that need the reporting of the all cases and for category V infectious diseases reportable only from sentinel medical facilities. Table 1 in p. 18 lists target infectious diseases in the pathogen surveillance (sexually transmitted diseases and a few other diseases are not among them).

Health centers are authorized to make request to doctors for specimens or isolated pathogens under the active surveillance provision in the law. Upon the request, the doctors have to send the specimens to a health center nearby together with the pathogen examination card that carries information on patient's age, sex, clinical findings, etc. Upon receipt, the health center fills in the space for epidemiological findings in the card, and sends specimens and the card to the PHI.

After laboratory examination, PHIs fill in the space for laboratory data in the pathogen examination card, and send the cards back to health centers and inform IDSC of detection of pathogens (Fig. 3-6). Laboratory data of pathogens implicated in diseases other than the NESID targets, such as pathogens associated with food poisoning outbreaks, those detected through inspection of environment, foods, animals, etc are processed in the same manner as a reporting category "others". Quarantine stations report isolation of pathogens when they detect/isolate them from those who returned from abroad or in foreigners who entered into Japan (Fig. 4).

The Reference Committee in APHLMT has established for the purpose of pathogen surveillance 13 pathogen specific reference centers to work on typing and genetic analyses of isolates, and in collaboration with PHIs and NIID produced laboratory manuals, which can be downloaded from the NIID website (http://www.nih.go.jp/niid/reference/index.html).

On-line System: Reporting of pathogen detection from PHIs and quarantine stations to IDSC first used pathogen examination cards that are sent by mail and dissemination of

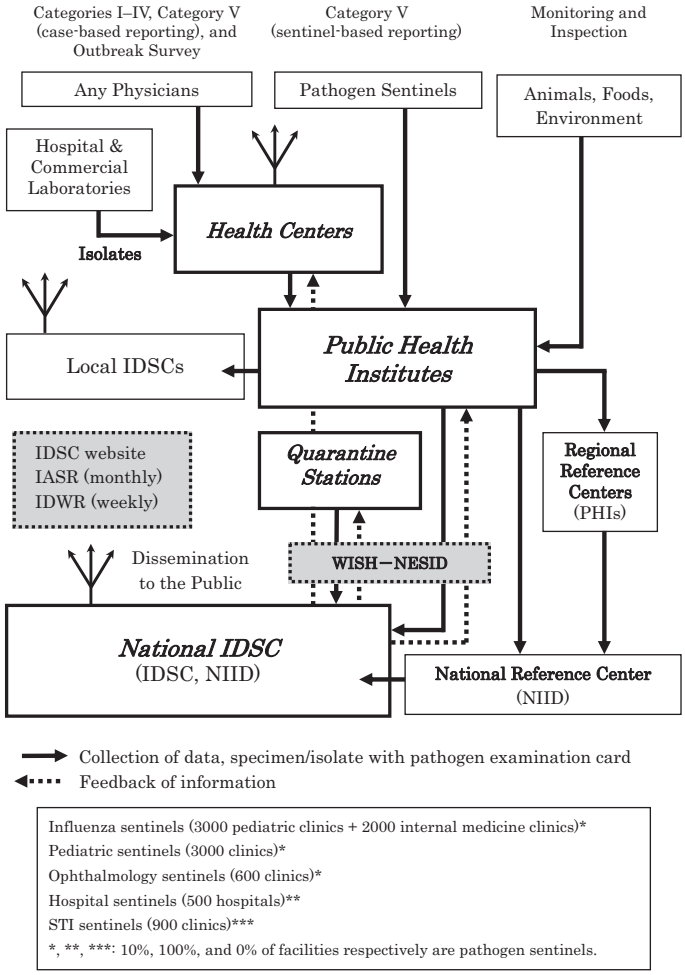

Fig. 2. Pathogen surveillance system under the National Epidemiological Surveillance of Infectious Diseases.

the information from IDSC back to PHIs, quarantine stations, etc was only through a monthly report sent by mail. The mail system was replaced with the on-line system using Wide-area Information-exchange System for Health and welfare administration (WISH) in January 1997. WISH is an intranet system accessible only to the its founder Ministry of Health, Labour and Welfare (MHLW, former Ministry of Health and Welfare), local governments, PHIs, quarantine stations, health centers and other specified organizations.

When the on-line system started, the pathogen detection data sent from various parts of Japan every day were first stored in a personal computer in IDSC, NIID; then at the end of the month, the nationwide data thus compiled were processed by the file transport protocol to be placed on the WISH as a file. The system is now much improved as detailed below.

In May 2006, the reporting of pathogen detection and the reporting of infectious disease cases were integrated together into the NESID system, whose database is managed centrally. The System for Laboratory Findings of Infectious Agents was constructed as a subsystem of NESID, in which all the data reported by PHIs since 1980 are compiled. IDSC in NIID checks new reports and corrections of previous data/reports that it receives every day, and releases them immediately to the users having access to NESID. The data updated daily enter automatically into preformatted tables and figures overnight, which appear on the next morning. In addition, users of any organizations accessible to NESID can use the compiled data for their own analysis through data search and processing.

Dissemination of Information: Data and information obtained by PHIs and quarantine stations appear in monthly publication of Infectious Agents Surveillance Report (IASR) and in Supplement of Japanese Journal of Infectious Diseases published once a year. They are also available in the format of tables and figures daily updated on IASR homepage (http://idsc.nih.go.jp/iasr/index.html).

IASR was first published in March 1980 by the Working Group of the Research Project for Development of a Surveillance System of Pathogenic Microbes in Japan (1979-1982, under direction by Hiromasa Inoue, Director General of Aichi Prefectural Institute of Public Health at that time). Since then, IASR has been published every month without interruption. The editorial activities are carried out by the IASR secretariat in NIID/NIH.

Since 1983, it has been jointly published by NIID/NIH and Tuberculosis and Infectious Diseases Control Division in MHLW. It is the only infectious disease journal that is published regularly by the national government. IASR is distributed to information originators (e.g. PHIs, quarantine stations, health centers, collaborative medical institutions), public health departments of local governments, departments concerned in MHLW, NIID and other institutions. Internet version is available in IASR homepage, too.

From November 1982, every IASR issue contains a special article, “Topic of This Month”, which provides updated general epidemiological information on one selected disease or pathogen (see p.19-43). The “Topic of This Month” is usually accompanied with invited articles related to the topic. PHIs are invited to write an article in IASR when they report cases or outbreaks that merit special attention. Such articles appear under the title of “domestic information”. Articles under “information abroad” are abridged translations of selected articles among those that appeared in publications of World Health Organization (WHO), U.S. Center for Disease Control and Prevention, U.K. Health Protection Agency, etc. IASR reports monthly detection of viruses, rickettsiae, chlamydiae, bacteria, protozoae and parasites, in addition.

In addition, isolation of influenza viruses is reported to the WHO Influenza Center. The data is uploaded on the website of FluNet (http://www.who.int/flunet) installed by WHO.

2. Notes on the use of the infectious agent information

The information given in this report is a summary of the infectious agents isolated/detected by etiological diagnosis or pathogen surveillance conducted for a public health purpose.

In analyzing and citing the information of the infectious agents published in this report, the following should be considered.

The report includes exclusively the positive results.

The information system collects exclusively the positive results of pathogen isolation/detection, without recording the number of specimens, having failed to yield any pathogen. The number of positive results may or may not reflect that of all the examinations. This must be taken into consideration, particularly when comparison is made by district.

The results may not necessarily be correlated to the diseases or clinical symptoms.

As a common problem in laboratory diagnosis, the infectious agent can not always be identified as the direct cause of the disease or the clinical symptoms.

When a pathogen is isolated/detected from specimens of lesions, such as cerebrospinal fluid, blood, vesicles, biopsy, and autopsy, it must be correlated to the disease. However, when stool, pharyngeal swabs, or urine is examined, a pathogen is isolated from a case of latent or inapparent infection or the one transiently present might be isolated or detected*. Therefore, the correlation between the isolated/detected pathogen and the illness or clinical symptoms must be considered individually after checking up with epidemic conditions, specimens, examination methods and the results of other examinations

*Since 1997, the results of detection by PCR can be reported. However, the above problems in PCR have not been solved, the viruses detected only by PCR are separately shown on the tables (see p. 111-123).

Isolation/detection from the same person may sometimes be reported from more than two sources.

Of the reports of examinations provided by PHI or quarantine station, particularly those concerned with cholera and shigellosis, etc., those of the pathogenic agent isolated/detected from the same case may be duplicated. There is no process for elimination of such duplication. It is improper, therefore, to total the reported numbers from PHIs and those from quarantine stations, if there is such duplication.

The numbers of isolated/detected pathogens reported in previous Annual Reports have been updated.

The previous data files, if there are new reports or corrections, are updated on a case basis at IDSC, NIID. The annual data for 2003-2008 on p. 52-53, 87, 108-109 and 122-123 in this report may not necessarily coincide with the figures in the previously published annual reports. Such disagreement

REPORTED BY
MONTH OF SPECIMEN COLLECTION

CODE NUMBER	SPECIES, GROUPS, SEROVARS*	TOTAL NUMBER OF ISOLATES FROM HUMAN SOURCES	IMPORTED CASES**
100-001	Verotoxin-producing *Escherichia coli* (EHEC/VTEC)		
100-002	Enterotoxigenic *Escherichia coli* (ETEC)		
100-003	Enteroinvasive *Escherichia coli* (EIEC)		
100-004	Enteropathogenic *Escherichia coli* (EPEC)		
100-005	Other diarrhegenic *Escherichia coli*		
134-001	*Salmonella* Typhi		
134-002	*Salmonella* Paratyphi A		
104	*Salmonella* O4*		
105	*Salmonella* O7*		
106	*Salmonella* O8*		
107	*Salmonella* O9*		
108	*Salmonella* O9, 46 *		
109	*Salmonella* O3, 10 *		
110	*Salmonella* O1, 3,19 *		
111	*Salmonella* O11*		
112	*Salmonella* O13*		
113	*Salmonella* O6,14*		
114	*Salmonella* O16*		
115	*Salmonella* O17*		
116	*Salmonella* O18*		
117	*Salmonella* O21*		
118	*Salmonella* O28*		
119	*Salmonella* O30*		
120	*Salmonella* O35*		
121	*Salmonella* O38*		
122	*Salmonella* O39*		
123	*Salmonella* O40*		
124	*Salmonella* O41*		
125	*Salmonella* O42*		
126	*Salmonella* O43*		
127	*Salmonella* O45*		
128	*Salmonella* O47*		
129	*Salmonella* O48*		
130	*Salmonella* O50*		
131	*Salmonella* O51*		
134-003	*Salmonella* other groups		
134-004	*Salmonella* group unknown		
201-001	*Listeria monocytogenes*		
202-001	*Yersinia enterocolitica*		
202-002	*Yersinia pseudotuberculosis*		
204-001	*Vibrio cholerae* O1: El Tor, Ogawa, CT (+)		
204-002	*Vibrio cholerae* O1: El Tor, Ogawa, CT (-)		
204-003	*Vibrio cholerae* O1: El Tor, Inaba, CT (+)		
204-004	*Vibrio cholerae* O1: El Tor, Inaba, CT (-)		
204-005	*Vibrio cholerae* O1: Classical, Ogawa, CT (+)		
204-006	*Vibrio cholerae* O1: Classical, Ogawa, CT (-)		
204-007	*Vibrio cholerae* O1: Classical, Inaba, CT (+)		
204-008	*Vibrio cholerae* O1: Classical, Inaba, CT (-)		
204-011	*Vibrio cholerae* O1, CT (-)		
204-009	*Vibrio cholerae* O139, CT (+)		
204-010	*Vibrio cholerae* O139, CT (-)		
204-012	*Vibrio cholerae* non-O1 & O139		
204-013	*Vibrio parahaemolyticus*		
204-014	*Vibrio fluvialis*		
204-015	*Vibrio mimicus*		
219-001	*Aeromonas hydrophila*		
219-002	*Aeromonas sobria*		
219-003	*Aeromonas hydrophila/sobria*		
222-001	*Plesiomonas shigelloides*		
223-001	*Campylobacter jejuni*		
223-002	*Campylobacter coli*		
223-003	*Campylobacter jejuni/coli*		
226-001	*Staphylococcus aureus*		
227-001	*Clostridium perfringens*		
227-002	*Clostridium botulinum* E		
227-003	*Clostridium botulinum* non-E		
230-001	*Bacillus cereus*		

** IMPORTED CASES INCLUDED IN THE TOTAL

Fig. 3. Reporting form A for isolation of pathogenic bacteria (prefectural and municipal public health institutes) from human sources.

CODE NUMBER	SPECIES, GROUPS, SEROVARS*	TOTAL NUMBER OF ISOLATES FROM HUMAN SOURCES	IMPORTED CASES**
301-001	*Shigella dysenteriae* 1		
301-002	*Shigella dysenteriae* 2		
301-003	*Shigella dysenteriae* 3		
301-004	*Shigella dysenteriae* 4		
301-005	*Shigella dysenteriae* 5		
301-006	*Shigella dysenteriae* 6		
301-007	*Shigella dysenteriae* 7		
301-008	*Shigella dysenteriae* 8		
301-009	*Shigella dysenteriae* 9		
301-010	*Shigella dysenteriae* 10		
301-011	*Shigella dysenteriae* 11		
301-012	*Shigella dysenteriae* 12		
301-090	*Shigella dysenteriae* other serovars		
301-099	*Shigella dysenteriae* serovar unknown		
302-001	*Shigella flexneri* 1a		
302-002	*Shigella flexneri* 1b		
302-003	*Shigella flexneri* 1		
302-004	*Shigella flexneri* 2a		
302-005	*Shigella flexneri* 2b		
302-006	*Shigella flexneri* 3a		
302-007	*Shigella flexneri* 3b		
302-008	*Shigella flexneri* 4a		
302-009	*Shigella flexneri* 4b		
302-010	*Shigella flexneri* 4		
302-011	*Shigella flexneri* 5a		
302-012	*Shigella flexneri* 5b		
302-013	*Shigella flexneri* 6		
302-014	*Shigella flexneri* var. X		
302-015	*Shigella flexneri* var. Y		
302-090	*Shigella flexneri* other serovars		
302-099	*Shigella flexneri* serovar unknown		
303-001	*Shigella boydii* 1		
303-002	*Shigella boydii* 2		
303-003	*Shigella boydii* 3		
303-004	*Shigella boydii* 4		
303-005	*Shigella boydii* 5		
303-006	*Shigella boydii* 6		
303-007	*Shigella boydii* 7		
303-008	*Shigella boydii* 8		
303-009	*Shigella boydii* 9		
303-010	*Shigella boydii* 10		
303-011	*Shigella boydii* 11		
303-012	*Shigella boydii* 12		
303-013	*Shigella boydii* 13		
303-014	*Shigella boydii* 14		
303-015	*Shigella boydii* 15		
303-016	*Shigella boydii* 16		
303-017	*Shigella boydii* 17		
303-018	*Shigella boydii* 18		
303-090	*Shigella boydii* other serovars		
303-099	*Shigella boydii* serovar unknown		
304-001	*Shigella sonnei*		
304-002	*Shigella* species unknown		
401-001	*Entamoeba histolytica*		
402-001	*Cryptosporidium* spp.		
403-001	*Giardia lamblia*		

** IMPORTED CASES INCLUDED IN THE TOTAL

Fig. 3.-Continued-1.

CODE NUMBER	SPECIES, GROUPS, SEROTYPES*	TOTAL NUMBER OF ISOLATES FROM HUMAN SOURCES	IMPORTED CASES**
501	*Streptococcus* A*		
502-001	*Streptococcus* B		
502-002	*Streptococcus* C		
502-003	*Streptococcus* G		
502-004	*Streptococcus* other groups		
502-005	*Streptococcus* group unknown		
502-006	*Streptococcus pneumoniae*		
508-001	*Corynebacterium diphtheriae*		
509-001	*Bordetella pertussis*		
510-001	*Legionella pneumophia*		
510-002	*Legionella* others		
512-001	*Mycobacterium tuberculosis*		
512-002	*Mycobacterium bovis*		
512-003	*Mycobacterium avium*- intracellulare complex		
515-001	*Haemophilus influenzae* type b		
515-002	*Haemophilus influenzae* other types		
517-001	*Klebsiella pneumoniae*		
518-001	*Neisseria meningitidis*		
518-002	*Neisseria gonorrhoeae*		
520-001	*Leptospira* spp.		
521-001	*Borreria burgdorferi*		
522-001	*Mycoplasma pneumoniae*		
	Total		

** IMPORTED CASES INCLUDED IN THE TOTAL

Fig. 3.-Continued-2.

REPORTED BY
DATE OF REPORTING(YYMMDD)
CATEGORY OF DISEASE ☐BACTERIA ☐PROTOZOA ☐VIRUS ☐RICKETTSIA/CHLAMYDIA

ID No.
INFECTIOUS AGENT*
DATE OF SPECIMEN COLLECTION (YYMMDD)

*TYPING RESULT OF BACTERIA
SEROTYPE/SEROVAR
TOXIN TYPE/PATHOGENICITY
BIOCHEMICAL FEATUER, etc

PATIENT DATA
GENDER
AGE IN YEARS
AGE IN MONTHS
INSTITUTE OF SPECIMEN COLLECTION
CATEGORY OF SENTINEL
DIAGNOSIS
SYMPTOMATIC OR ASYMPTOMATIC
DATE OF ONSET (YYMMDD)
PROGNOSIS

SOURCE OF SPECIMEN
☐STOOL ☐BIOPSY/AUTOPSY (ORGAN:) ☐NEEDLE BIOPSY (THORACIC FLUID, etc)
☐SPUTUM/TRACHEAL ASPITATES ☐BLOOD ☐SKIN/VESICLE
☐NASOPHARYNGEAL ☐CEREBROSPINAL FLUID ☐GENITAL
☐EYE ☐URINE
☐VOMIT ☐OTHER ( )

CLINICAL CONDITION/FEATURE OTHER THAN EHEC POSITIVE CASE
☐NO DATA ☐HEADACHE ☐SHOCK (← LOW BLOOD PRESSURE, CIRCULATORY DISTURBANCE)
☐HEALTHY/NO ILLNESS ☐GASTRO-INTESTINAL DISEASE (☐DIARRHEA ☐VOMITING)
☐FEVER (℃) ☐BLOODY DIARRHEA ☐ABDOMINAL PAIN
☐FEBRILE CONVULSION ☐KERATITIS ☐CONJUNCTIVITIS ☐KERATOCONJUNCTIVITIS
☐DISEASE OF MUSCLES & JOINTS (←ARTHRITIS) ☐MENINGITIS ☐ALTERED CONSCIOUSNESS
☐STOMATITIS ☐PARALYSIS
☐UPPER RESPIRATORY TRACT INFECTION ☐ENCEPHALITIS ☐ENCEPHALOPATHY
☐LOWER RESP. TRACT INFECTION (☐PNEUMONIA ☐BRONCHITIS) ☐MYELITIS
☐VESICLE ☐CARDIOVASCULAR DISORDER
☐ERUPTION ☐JAUNDICE
☐HEMORRHAGIC PREDISPOSITION ☐HEPATIC DISORDER
☐ENLARGED LYMPH NODES ☐HUS
☐SALIVARY GLANDULAR DISEASE ☐RENAL DISORDER
☐OTHER ( ) ☐GENITOURINARY DISEASE

METHOD OF ISOLATION/DETECTION
☐CULTURE ☐CELL SENSITIVE CELLS ☐MEDIUM ☐CHICK EMBRYO (PASSAGE) (PASSAGE) ☐ANIMAL SENSITIVE CELLS ☐OTHER (PASSAGE)
☐ANTIGEN DETECTION ☐FA ☐EIA ☐RPHA ☐LA ☐PA ☐IC ☐OTHER
☐GENE DETECTION NON-AMPLIFIED AMPLIFIED ☐HYBRIDIZATION ☐PAGE ☐OTHER ☐PCR ☐PCR+HYBRIDIZATION ☐PCR+SEQUENCING ☐OTHER
☐ELECTRON MICROSCOPY ☐MICROSCOPY
☐OTHER ( )

EPIDEMIOLOGICAL INFORMATION
☐SPORADIC ☐EPIDEMIC ☐FAMILIAL OUTBREAK ☐OUTBREAK (PLACE)
OVERSEAS TRAVEL ☐NO (PLACE OF RESIDENCE)
☐YES COUNTRY/AREA COUNTRY/AREA
COUNTRY/AREA COUNTRY/AREA
TRAVEL PERIOD FROM(YYMMDD) TO (YYMMDD)
VACCINATION HISTORY
VACCINE
DATE OF VACCINATION (YYMMDD)

REMARKS

RECORD No.

Fig. 4. Reporting form B for individual case of pathogen isolation/detection from human sources.

REPORTED BY
DATE OF REPORTING(YYMMDD)
CATEGORY OF DISEASE
BACTERIA OR VIRUS

SUSPECTED ROUTE OF INFECTION
DIAGNOSIS
ID No.
PLACE OF INCIDENT OCCURRED ☐JAPAN (PREFECTURE/CITY) ☐OVERSEAS (COUNTRY/AREA)
PERIOD FROM (YYMMDD) TO (YYMMDD)
SUSPECTED PLACE OF PREPARING FOOD
SUSPECTED PLACE OF INFECTION/EATING FOOD
INCRIMINATED FOOD CATEGORY
NAME
SUSPECTED CAUSE
NUMBER OF CONSUMERS
NUMBER OF PATIENTS
PATIENT'S AGE FROM
TO
NUMBER OF EXAMINED
NUMBER OF POSITIVE CASE
INCUBATION PERIOD hrs.
SECONDARY INFECTION YES or No

BACTERIA/PROTOZOA ISOLATED FROM HUMAN
INFECTIOUS AGENT
SEROTYPE/SEROVAR
TOXIN TYPE/PATHOGENICITY
BIOCHEMICAL FEATURE, etc

BACTERIA/PROTOZOA ISOLATED FROM FOOD, DRINKING WATER
SPECIMEN
INFECTIOUS AGENT
SEROTYPE/SEROVAR
TOXIN TYPE/PATHOGENICITY
BIOCHEMICAL FEATURE, etc

BACTERIA/PROTOZOA ISOLATED FROM KITCHEN, COOKWARE, FOOD HANDLERS
SPECIMEN
INFECTIOUS AGENT
SEROTYPE/SEROVAR
TOXIN TYPE/PATHOGENICITY
BIOCHEMICAL FEATURE, etc

VIRUS ISOLATED/DETECTED FROM HUMAN ☐POSITIVE ☐NEGATIVE
INFECTIOUS AGENT
METHOD OF ISOLATION/DETECTION
☐CELL ☐MEDIUM ☐CHICK EMBRYO (PASSAGE) ☐ANIMAL ☐OTHER
SENSITIVE CELLS (PASSAGE) SENSITIVE CELLS (PASSAGE)
☐ANTIGEN DETECTION ☐FA ☐EIA ☐RPHA ☐LA ☐PA ☐IC ☐OTHER
☐GENE DETECTION NON-AMPLIFIED ☐HYBRIDIZATION ☐PAGE ☐OTHER
AMPLIFIED ☐PCR ☐PCR+HYBRIDIZATION ☐PCR+SEQUENCING ☐OTHER
☐ELECTRON MICROSCOPY ☐MICROSCOPY
☐OTHER ( )

VIRUS ISOLATED/DETECTED FROM FOOD, DRINKING WATER
SPECIMEN
INFECTIOUS AGENT
METHOD OF ISOLATION/DETECTION
☐CELL ☐MEDIUM ☐CHICK EMBRYO (PASSAGE) ☐ANIMAL ☐OTHER
SENSITIVE CELLS (PASSAGE) SENSITIVE CELLS (PASSAGE)
☐ANTIGEN DETECTION ☐FA ☐EIA ☐RPHA ☐LA ☐PA ☐IC ☐OTHER
☐GENE DETECTION NON-AMPLIFIED ☐HYBRIDIZATION ☐PAGE ☐OTHER
AMPLIFIED ☐PCR ☐PCR+HYBRIDIZATION ☐PCR+SEQUENCING ☐OTHER
☐ELECTRON MICROSCOPY ☐MICROSCOPY
☐OTHER ( )

REMARKS

RECORD No.

Fig. 5. Reporting form C for outbreak.

REPORTED BY
DATE OF REPORTING(YYMMDD)
BACTERIA OR VIRUS

ID No.
DATE OF SPECIMEN COLLECTION (YYMMDD)
SPECIMEN
DOMESTIC or IMPORETED
NUMBER OF SPECIMEN
NUMBER OF POSITIVE SPECIMEN

ISOLATED BACTERIA/PROTOZOA
SEROTYPE/SEROVAR
TOXIN TYPE/PATHOGENICITY
BIOCHEMICAL FEATURE, etc

ISOLATED/DETECTED VIRUS
METHOD OF ISOLATION/DETECTION
☐CELL ☐MEDIUM ☐CHICK EMBRYO (PASSAGE) ☐ANIMAL ☐OTHER
SENSITIVE CELLS (PASSAGE) SENSITIVE CELLS (PASSAGE)
☐ANTIGEN DETECTION ☐FA ☐EIA ☐RPHA ☐LA ☐PA ☐IC ☐OTHER
☐GENE DETECTION NON-AMPLIFIED ☐HYBRIDIZATION ☐PAGE ☐OTHER
AMPLIFIED ☐PCR ☐PCR+HYBRIDIZATION ☐PCR+SEQUENCING ☐OTHER
☐ELECTRON MICROSCOPY ☐MICROSCOPY
☐OTHER ( )

REMARKS

RECORD No.

Fig. 6. Reporting form D for pathogen isolation/detection from food, environment and animal.

is rare in the reports of bacterial pathogens, whereas may be seen almost every year in viral isolation/detection. Nevertheless, the difference is not so large as to influence the overall trend.

The numbers of reports of isolation/detection in this report were based on the laboratory data submitted to IDSC, NIID before August 3, 2010.

3. The National Epidemiological Surveillance of Infectious Diseases in compliance with the enforcement of the Infectious Diseases Control Law

The NESID in Japan started in 1981 consists of 1) sentinel surveillance for occurrence of patients of 27 kinds of infectious diseases other than legally notifiable diseases, and 2) infectious agents surveillance. The surveillance, however, has not been based upon any legal basis.

In April 1999, the Communicable Disease Prevention Law in effect since 1897, the Venereal Disease Prevention Law since 1948, and the AIDS Prevention Law since 1989 have been abrogated and the Infectious Diseases Control Law is being enacted. In this new law, the NESID program is defined as one of the main objects. Intensifying the surveillance system based on notification from physicians, collection, comprehension and analysis of the incidence and the trend of infectious diseases, and feedback of such information are proposed; moreover active surveillance has been introduced for epidemiological investigations. Since the information of infectious agents is essential for providing adequate medical care to patients and important to prevent and control the spread of infectious diseases, it is necessary to collect, analyze, and publish the information on infectious agents. It is required that these information published benefit the general public as well as those working in medical fields.

The purpose of the new NESID program is settled in compliance with the Infectious Diseases Control Law to promote effective and accurate infectious disease control measures by reinforcing and expanding the conventional surveillance system, restructuring the computer-network system to obtain, analyze, and quickly publish the information on a nation-wide scale and conducting active surveillance. Government and local governments (prefectures and cities including special wards having health centers) are responsible for conducting the surveillance.

Target diseases: In the Infectious Diseases Control Law, all infectious diseases of Category I-V are designated as the targets of the NESID (see p. 18 Table 1).

Organization of the surveillance system: As the organization to play a central role in the national surveillance, the national infectious disease surveillance center has been organized. IDSC, NIID fulfills the function. A district infectious disease surveillance center has been organized by each local government, and it is placed mainly in the PHI to conduct the surveillance within the district. In each prefecture, one of district infectious disease surveillance centers is assigned for the key district infectious disease surveillance center, which collects and analyzes the information from the whole area of the prefecture and forwards the results to the rest of district infectious disease surveillance centers. With participation of experts on infectious diseases in different fields, a national committee of infectious disease surveillance is organized in MHLW and a district committee of infectious disease surveillance in the local government.

Surveillance for Category I-IV infectious diseases:

Physicians diagnosing target infectious diseases: The physician who has diagnosed any of the target infectious diseases must report immediately the name, age and sex of the patients and other information on the reporting form to the nearby HC. When HC requires tests for the etiological agent, the physician will send the available specimens and/or the information on the infectious agent to the PHI.

HCs: HC must immediately forward the patient information to the health department of the local government (local health department) and the district infectious disease surveillance center via computer-network system. When necessary, the HC will ask the physician to send the specimens and/or information on the etiology of the infection to PHI.

HC must also distribute the information on the incidence of target diseases and their infectious agents obtained from the district infectious disease surveillance center to the municipalities, the medical institutions concerned, the Medical Association, the Board of Education, etc. through weekly and monthly reports or other media.

HC receiving any notification on Category I-IV infectious diseases must inform the incident (except for the information on the patient's privacy) to the above-described organizations.

PHIs: PHI conducts the laboratory tests requested and sends the results to the physician through HC. The information on the infectious agents sent by the physician and the results of the laboratory tests must be sent to HC, the local health department, and the district infectious disease surveillance center.

Any tests difficult to conduct at PHI are transferred to the NIID.

NIID: The NIID conducts the laboratory test requested and reports the results to the PHI and the national infectious disease surveillance center.

Local health departments: Upon receiving the patient information from HC by electronic telecommunication, the local health department must send the information to the national infectious disease surveillance center through the computer-network system. The information on the infectious agents including the results of the tests sent from the PHI should also be reported immediately to the national infectious disease surveillance center.

District (key district) infectious disease surveillance centers: The district infectious disease surveillance center should collect and analyze the information on incidence of target diseases and their infectious agents (including that on the results of the tests conducted by PHI) and convey the information to HCs and other institutions concerned through weekly report or other media together with the published information on the whole country obtained from the national infectious disease surveillance center. The key district infectious disease surveillance center must furnish the information in the prefecture to the district infectious disease surveillance centers and other organizations together with the information on the whole country.

National infectious disease surveillance center: The national infectious disease surveillance center must immediately compile, analyze and evaluate the patient information received from the local health departments and send the information on incidence of target diseases in the whole country to the local health departments through weekly report or other media together with that of Category V infectious

diseases. The information on infectious agents are analyzed and evaluated, and the results are to be sent immediately to the local health departments and, if necessary, published in weekly report or other media.

Surveillance for Category V infectious diseases (required notifying all the cases):

Physicians diagnosing target infectious diseases: The physician who has diagnosed any of the target infectious diseases must report within 7 days the age and sex of the patient and other information on the reporting form to the nearby HC. Infectious agent surveillance will be conducted by request from the health center in the same way as for the infectious diseases in Category I-IV.

HCs: HC must forward as soon as possible, at the latest within 7 days the information to the local health department and the district infectious disease surveillance center through the computer-network system. Concerning the target diseases for infectious agent surveillance among Category V infectious diseases marked with * in the Table 1 on p. 18, the health center will ask the physician to send specimens for the microbiological tests and/or the information on the infectious agent to PHI, if necessary.

HC must also regularly distribute in the same way as for the Category I-IV infectious diseases information on incidence of target diseases and their infectious agents retrieved from the district infectious disease surveillance center.

PHIs: Similar to the Category I-IV infectious diseases.

NIID: Similar to the Category I-IV infectious diseases.

Local health departments: Within 7 days after HC has received information, the local health department must send it to the national infectious disease surveillance center through the computer-network system. The information on the infectious agents sent from PHI should also be transmitted immediately to the national infectious disease surveillance center.

District (key district) infectious disease surveillance centers: Similar to the Category I-IV infectious diseases.

National infectious disease surveillance center: The national infectious disease surveillance center must immediately compile, analyze and evaluate the patient information sent from the local health departments and send the information on incidence of target diseases in the whole country to the local health departments through weekly reports or other media together with that on Category I-IV infectious diseases and Category V infectious diseases to be reported by the sentinel clinics and hospitals. The information on infectious agents is treated in the same way as for that on the Category I-IV infectious diseases.

Surveillance for Category V infectious diseases (required to be reported by the sentinel clinics and hospitals):

Sentinels: The number of sentinel clinics and hospitals is decided depending on the relative population of the jurisdiction of each HC and on consideration enabling comprehending the incidents in the whole area of the prefecture. The sentinel clinics comprise those for pediatric diseases (about 3,000 pediatrics in the whole country), those for influenza (3,000 pediatrics as mentioned above plus about 2,000 internal medicine), those for eye diseases (about 600 ophthalmology in the whole country), those for sexually transmitted diseases (about 900 STD clinics including gynecology, obstetrics, urology, and dermatology in the whole country). The sentinel hospitals primarily target inpatients (about 500 hospitals having more than 300 beds providing medical care in pediatrics and internal medicine in the whole country).

About 10% of sentinel clinics for pediatric diseases, influenza, eye diseases and all the sentinel hospitals serve as sentinels for infectious agent surveillance. The target diseases for infectious agent surveillance are shown with a mark * in the Table 1 on p. 18.

Incidence of the pediatric diseases, influenza and eye diseases found at sentinels are reported every week to health centers. Those of the target diseases at sentinel hospitals except for drug-resistant bacterial infections are also reported every week. Those of STD at sentinel clinics and drug-resistant bacterial infections at sentinel hospitals are reported every month to health centers. Specimens for etiological tests are sent from sentinels for infectious agent surveillance to PHI.

HCs: HC must send the information on incidence of infectious diseases obtained from sentinels to the local health department and the district infectious disease surveillance center via computer-network system (weekly reports are sent by Tuesday of the next week and monthly reports by the 3rd of the next month).

HC must also feed back the information on incidence of target diseases and their infectious agents obtained from the district infectious disease surveillance center in the same way as for Category I-IV infectious diseases.

PHIs: Similar to the Category I-IV infectious diseases.

NIID: Similar to the Category I-IV infectious diseases.

Local health departments: As soon as the information is received from HC, the local health department must forward it to the national infectious disease surveillance center through the computer-network system. The information on the infectious agents received from PHI should also be reported immediately to the national infectious disease surveillance center.

District (key district) infectious disease surveillance centers: Similar to the Category I-IV infectious diseases.

National infectious disease surveillance center: The national infectious disease surveillance center must immediately compile, analyze and evaluate the patient information received from the local health departments and send the information on incidence of target diseases in the whole country to the local health departments by weekly report or other media together with that on the Category I-IV infectious diseases and the Category V infectious diseases required to comprehend all the cases. The information on infectious agents is treated in the same way as that for the Category I-IV infectious diseases.

Active surveillance: Active surveillance for epidemiological investigation is introduced so that the governor of the local government can operate when any of the Category I-IV infectious diseases occurs or the incidence of Category V infectious diseases show an unusually different trend. Understanding and cooperation with close connection of people concerned may be necessary for operation of active surveillance. The Field Epidemiology Training Program to educate experts participating in active surveillance is being held at the NIID from the fiscal year of 1999.

For adequate treatment, prevention and control of infectious diseases on personal and district levels to the national level, high quality surveillance accurately comprehending the trend of the diseases and the infectious agents is essential. To realize this purpose, the understanding and cooperation of people in many different fields is required in operating the NESID program.

Table 1. Target diseases of the Infectious Diseases Control Law revised on May 12, 2008

(Reportable infectious diseases under the National Epidemiological Surveillance of Infectious Diseases)

1. Target diseases to be notified all cases by all physicians

Category I (to be notified promptly after diagnosis)

Crimean-Congo hemorrhagic fever*, Ebola hemorrhagic fever*, Lassa fever*, Marburg disease*, Plague*, Smallpox*, South American hemorrhagic fever*

Category II (to be notified promptly after diagnosis)

Acute poliomyelitis*, Avian influenza virus infection (H5N1)*, Diphtheria*, Severe acute respiratory syndrome (due to SARS coronavirus)*, Tuberculosis*

Category III (to be notified promptly after diagnosis)

Cholera*, Enterohemorrhagic *Escherichia coli* infection*, Paratyphoid fever*, Shigellosis*, Typhoid fever*

Category IV (to be notified promptly after diagnosis)

Anthrax*, Avian influenza virus infection (excluding H5N1)*, Botulism*, Brucellosis*, Coccidioidomycosis*, Dengue fever*, Eastern equine encephalitis*, Echinococcosis*, Epidemic typhus*, Glanders*, Hantavirus pulmonary syndrome*, Hemorrhagic fever with renal syndrome*, Hendra virus infection*, Hepatitis A, Hepatitis E*, Herpes B virus infection*, Japanese encephalitis*, Japanese spotted fever*, Kyasanur Forest disease*, Legionellosis*, Leptospirosis*, Lyme disease*, Lyssavirus infection (excluding rabies)*, Malaria, Melioidosis*, Monkeypox*, Nipah virus infection*, Omsk hemorrhagic fever*, Psittacosis*, Q fever*, Rabies*, Relapsing fever*, Rift Valley fever*, Rocky Mountain spotted fever*, Scrub typhus (Tsutsugamushi disease)*, Tick-borne encephalitis*, Tularemia*, Venezuelan equine encephalitis*, West Nile fever (including West Nile encephalitis)* , Western equine encephalitis*, Yellow fever*

Category V (to be notified within 7 days after diagnosis)

Acquired immunodeficiency syndrome*, Amebiasis*, Acute encephalitis (excluding Eastern equine encephalitis, Japanese encephalitis, Rift Valley fever, Tick-borne encephalitis, Venezuelan equine encephalitis, West Nile encephalitis and Western equine encephalitis)*, Congenital rubella syndrome*, Creutzfeldt-Jakob disease*, Cryptosporidiosis, Giardiasis, Measles*, Meningococcal meningitis*, Rubella*, Severe invasive streptococcal infections (Streptococcal toxic shock-like syndrome)*, Syphilis, Tetanus*, Vancomycin-resistant *Enterococcus* infection*, Vancomycin-resistant *Staphylococcus aureus* infection*, Viral hepatitis (excluding hepatitis A and E)

Pandemic influenza and relevant infections (to be notified promptly after diagnosis)

Pandemic influenza*, Re-emerging pandemic influenza*

2. Target diseases to be reported by the sentinel clinics and hospitals

Category V

<Influenza sentinel> (weekly report)

Influenza (excluding avian influenza virus infection, pandemic influenza and relevant infections)*

<Pediatric disease sentinel> (weekly report)

Chickenpox, Erythema infectiosum, Exanthem subitum, Group A streptococcal pharyngitis*, Hand, foot and mouth disease*, Herpangina*, Infectious gastroenteritis*, Mumps*, Pertussis*, Pharyngoconjunctival fever*, Respiratory syncytial virus infection*

<Eye disease sentinel> (weekly report)

Acute hemorrhagic conjunctivitis*, Epidemic keratoconjunctivitis*

<Sexually transmitted disease (STD) sentinel> (monthly report)

Condyloma acuminatum, Genital chlamydial infection, Genital herpes, Gonorrhea

<Target diseases at sentinel hospital>

(weekly report)

Aseptic meningitis*, Bacterial meningitis (excluding meningococcal meningitis)*, Chlamydial pneumonia (excluding psittacosis), Mycoplasmal pneumonia

(monthly report)

Methicillin-resistant *Staphylococcus aureus* infection, Multi-drug-resistant *Pseudomonas aeruginosa* infection, Penicillin-resistant *Streptococcus pneumoniae* infection

Target disease of syndromic surveillance designated by the government ordinance

<Syndromic surveillance sentinel> (to be reported promptly after diagnosis)

Unknown fever (≥38°C) and respiratory symptom, Unknown fever and rash/vesicle

3. Target disease of active epidemiological surveillance to be reported through on-line system

Category II infectious disease

Avian influenza virus infection (H5N1)

*Target disease of infectious agent surveillance